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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,188	03/29/2004	Deuk Il Park	CL-10271	5838

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SCHMEISER OLSEN & WATTS
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MESA, AZ 85201

EXAMINER

SANEL, HANA ASMAT

ART UNIT PAPER NUMBER

2879

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/813,188

Applicant(s)

PARK ET AL.

Examiner

Hana A. Sanei

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/5/06.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 2,3,5,7 and 8, 10 is/are allowed.
6) ☒ Claim(s) 1 and 6 is/are rejected.
7) ☒ Claim(s) 4 and 9 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The Amendment, filed on 7/5/06, has been entered and acknowledged by the Examiner.

Claims 1-10 are pending in the instant application

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable Winsor (US 5463274) in view of Vollkommer et al (US 6034470) in further view of Takagi et al (US 6376986 B1).

Regarding Claims 1 & 6, Winsor teaches a flat fluorescent lamp (planar fluorescent lamp, 10, see at least Fig. 1) comprising a front substrate (22); a back substrate (24) having a continuous serpentine type discharge channel (divider walls, 26 & 28, Fig. 1) defined by a plurality of partitions (26 & 28); a pair of electrodes (sidewall electrodes, 38 & 40) provided on an outer surface of the front and back substrates; an

inverter (Col. 3, lines 22-27); and a frame (peripheral portions of 22 & 24) having the flat fluorescent lamp. It should be noted that since Winsor's pair of sidewalls (18, 20) act to bring together the formation of parts fitted together, the applicant's term "frame" may loosely be interpreted as such. Winsor lacks the electrodes including a plurality of subsidiary electrodes.

In the same field of endeavor, Vollkommer teaches flat fluorescent lamp (see at least Fig. 8a, Col. 1, lines 9-11) having a discharge electrode (13 & 14) and a plurality of subsidiary electrodes (4/3 & 5/6 respectively), the discharge electrodes are mounted in strip shapes, and the plurality of subsidiary electrodes correspond to positions of the Winsor's partitions, and are disposed to be perpendicular to the discharge electrodes (as displayed in Fig. 4), the plurality of subsidiary electrodes being alternately connected to inner edges of both the discharge electrodes so that neighboring subsidiary electrodes have different polarities (Col. 8, lines 26-36 & Fig. 8a, such that 4/3 are cathodes and 6/5 are anodes, hence establishing different polarities in an alternating fashion), wherein crosstalk between parallel portions of the discharge channel is inhibited. Vollkommer teaches that the alternating arrangement provides advantageous benefits of operating the device reduced power consumption (Col. 11, lines 51-54).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the electrodes, as disclosed by Vollkommer, in the device of Winsor for providing overall reduced power consumption. Winsor-Vollkommer

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fails to specifically teach the plurality of subsidiary electrodes being aligned within the partitions in directly overlying relation to the partitions.

In the same field of endeavor, Takagi teaches a flat fluorescent lamp (plasma display panel, see at least Fig. 11) plurality of subsidiary electrodes (43, metal film) being aligned within the partitions (29) in directly overlying relation to the partitions (43 directly following contour of the meandering partition 29) in order to ensure that an electrode area ratio at a narrowing portion is small, so that a diffusion of the discharge along the electrode is suppressed so that the interference of the discharge in the column direction is prevented (Col. 2, lines 54-66). It should further be noted that with this embodiment, the opaque metal film 43 of Takagi is formed directly over the solid partitions, thereby eliminating any additional blockage of light. To supplement this configuration, the 41 discharge electrode is formed of ITO a transparent material, inherently not blocking any additional light.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the location of the subsidiary electrode with respect to the partitions, as disclosed by Takagi, in the flat fluorescent lamp of Winsor-Volkommer in order to ensure that an electrode area ratio at a narrowing portion is small, so that a diffusion of the discharge along the electrode is suppressed so that the interference of the discharge in the column direction is prevented

Allowable Subject Matter

A. Claim 2-3, and 5 are allowed over the prior art of record.

The following is an examiner's statement of reasons for allowance:

The prior art of record teaches a flat fluorescent lamp, comprising: a front substrate; a back substrate having a continuous serpentine type discharge channel defined by a plurality of partitions, which are extended from both side ends of the back substrate and alternately disposed; a pair of electrodes provided on an outer surface of any one of the front substrate and the back substrate; and an inverter to apply power to the electrodes, wherein each of the electrodes includes a discharge electrode and a subsidiary electrode, the discharge electrodes are mounted in strip shapes along both side ends of the outer surface of the any one of the front substrate and the back substrate, the subsidiary electrodes are mounted on the outer surface of the any one of the front substrate and the back substrate, and each of the subsidiary electrodes has a first subsidiary electrode extending parallel to at least one of the discharge electrodes, and a plurality of second subsidiary electrodes defining a contour, the contour aligned with the partitions, and the second subsidiary electrodes being perpendicular to the first subsidiary electrode, the second subsidiary electrodes of both the subsidiary electrodes being alternately connected to inner edges of both the first subsidiary electrodes so that neighboring electrodes have different polarities, and the discharge electrode and the first subsidiary electrode are separately connected to the inverter..

However, the prior art of record neither shows nor suggests a motivation for first subsidiary electrode not being in physical contact with any one of the discharge electrodes as set forth in Claim 2.

Claims 3 and 5 are allowable because of their dependency status from claim 2.

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B. Claim 4, 9 are objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

The prior art of record teaches each of the subsidiary electrodes, which are positioned to be perpendicular to the discharge electrodes,.

However, the prior art of record neither shows nor suggests a motivation for each of the subsidiary electrodes having a hollow part therein as set forth in Claim 4, 9.

C. Claim 7-8, and 10 are allowed over the prior art of record.

The following is an examiner's statement of reasons for allowance:

The prior art of record teaches A backlight unit, comprising: a diffusion member; a flat fluorescent lamp, which includes a front substrate, a back substrate having a continuous serpentine type discharge channel defined by a plurality of partitions, which are extended from both side ends of the back substrate and alternately disposed, a pair of electrodes provided on an outer surface of any one of the front substrate and the back substrate, and an inverter to apply power to the electrodes; and a frame having the diffusion member and the flat fluorescent lamp therein, wherein each of the electrodes includes a discharge electrode and a subsidiary electrode, the discharge electrodes are mounted in strip shapes along both side ends of the outer surface of the any one of the front substrate and the back substrate, the subsidiary electrodes are mounted on the outer surface of the any one of the front substrate and the back substrate, and each of the subsidiary electrodes has a first subsidiary electrode disposed at a predetermined

spacing from an adjacent one of the discharge electrodes while being in parallel therewith, and the discharge electrode and the first subsidiary electrode are separately connected to the inverter.

However, the prior art of record neither shows nor suggests a motivation for a plurality of second subsidiary electrodes which are in positions that are aligned with the partitions, the second subsidiary electrodes being in positions perpendicular to the first subsidiary electrode, and the second subsidiary electrodes of both the subsidiary electrodes being alternately connected to inner edges of both the first subsidiary electrodes so that neighboring electrodes have different polarities as set forth in Claim 7.

Claims 8 and 10 are allowable because of their dependency status from claim 2.

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Cull et al (US 6218776 B1) teaches a flat fluorescent lamp having a serpentine discharge channel.

Tsukada (US 5220249) teaches a flat fluorescent lamp having a serpentine discharge channel.

Response to Arguments

Claim 7 was rejected in the previous office action, however, as a typo it was not explicit (ie. In the rejection of #2 of previous office action; Winsor (US 5319282) in view of Amatsuchi et al (US 2002/0063523 A1)).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hana A. Sanei whose telephone number is (571) 272-8654. The examiner can normally be reached on Monday- Friday, 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hana A. Sanei
Examiner



Joseph Williams
Primary Examiner